



Calhoun: The NPS Institutional Archive
DSpace Repository

Department of Defense Management (DDM)

Manpower Systems Analysis Thesis Day Programs and Documents

2021-03

NPS MPTE-Related Student Theses for Period January-March 2021

Monterey, California, Naval Postgraduate School

<https://hdl.handle.net/10945/67628>

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

Downloaded from NPS Archive: Calhoun



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>



NPS Student MPTE-Related Thesis Topics

January-March 2021

Attrition

Impact of High School Quality on the Conduct and Attrition Characteristics of Enlisted Marines, Pincus, Alexander.

This study investigates the impact of high school quality and peer group characteristics on the misconduct and attrition of enlisted Marines. Misconduct incidents per year of service, propensity to commit misconduct, propensity to attrite within six years, and propensity to attrite under undesirable circumstances are regressed on high school quality, the number of fellow Marines from the same high school, and demographic breakdown of those fellow Marines. The model results show that high school quality, in itself, does not impact misconduct or attrition. Attending a high-quality high school does, however, amplify the negative impact that a higher Armed Forces Qualification Test (AFQT) score has on propensity to attrite within six years.

<https://calhoun.nps.edu/handle/10945/67167>

Applying Predictive Analytics in Assessing Health Conditions of Applicants; Knutson, Mark

Predicting military attrition due to conditions that existed prior to service is a complicated problem. My thesis explores underwriting practices and risk assessment in the life and health insurance industries with the aim to link private sector underwriting techniques to the military medical screening process. I review the current prediction models in the economic, actuary, and medical fields and find many of these models utilize complicated machine-learning algorithms to include random forests, deep convolutional neural networks, and deep dynamic memory neural network models. For my empirical analysis, I utilize a Cox proportional hazard model to determine risk via potential predictor variables. My findings suggest past self-inflicted injuries, substance use disorder (current and in the past), waivers for drug offenses, missing an Armed Forces Qualification Test (AFQT) score, and deployments (current and in the past) are associated with higher hazard rates of separation.

<https://calhoun.nps.edu/handle/10945/67146>

Coaching, Mentoring & Sponsorship

***Are Mentors Beneficial? Mentors Performance and Attributes as Predictors of Retention for Marine Corps Commissioned from NROTC Programs;* Kelly, Shannon, Kilber, Megan**

In this study, we first explore the predictive power of socio-demographic variables on retention, updating findings from previous studies. We focus on the officers commissioned from a Naval Reserve Officer Training Corps (NROTC) program to examine how a mentor's (Marine Officer Instructor) performance and shared attributes with a mentee (midshipman) predict retention behavior for the mentee at the 5- and 7-year milestones. Our findings do not definitively indicate that a mentor's performance or having shared attributes with a mentee are significant predictive factors for a mentee's retention decisions, suggesting that additional work on the mentor-mentee relationship and its effect on retention is warranted.

<https://calhoun.nps.edu/handle/10945/67143>

Compensation and Benefits

***Increasing the Servicemembers' Group Life Insurance Maximum Payout;* Steele, Katherine**

This research addresses the decreasing worth of the Servicemembers' Group Life Insurance (SGLI) payout based on the year a servicemember dies. The SGLI maximum has stagnated at \$400,000 for over 16 years and nearly every other servicemember entitlement or benefit has increased in this timeframe. The ultimate recommendation is to increase the SGLI maximum to \$525,000 in 2021, then continue to increase at 5-year intervals to correct for inflation, ultimately increasing to \$605,000 in 2041 at which point it can be reassessed or have the interval increases continue.

<https://calhoun.nps.edu/handle/10945/67185>

Destructive Behaviors

***Analysis of Smoking Behaviors in Afloat Commands;* Pajarillo, Brian**

The U.S. Navy offers a unique opportunity to explore the social role of smoking in the military, as it is used as a stress-relief tool in a high-pressure work environment. Navy ships are socially isolated, and smoking breaks serve as one of the few reprieves away from daily work. Through these observations, the aim of this research is to answer these questions: 1) Are there any peer effects affecting the propensity to smoke among specific job types in the Navy? 2) Are there variations in smoking rates across the different ship types? I compiled a de-identified individual-level database tracking active-duty sailors and their smoking-related diagnoses from 2002 to 2011.

<https://calhoun.nps.edu/handle/10945/67163>

Diversity and Inclusion

***The Barriers Latin American Countries Face with Female Integration Into Combat Roles: A Comparative Study*, Carrigan, Molly**

In this thesis, Norway, Israel, and the United States illustrate the differing approaches and successes of female integration into combat positions. It seeks to identify what measures could be applied to Latin American militaries desiring added diversity. Evidence indicates that distinct cultural norms have either effectively assisted or impeded the advancement of women's employment into combat specialties. In Norway and Israel, the inclusion of women in the armed forces was dependent on affirmative legislative action toward gender equality. The United States demonstrated a lack of leadership support that hindered women's integration.

<https://calhoun.nps.edu/handle/10945/67114>

***A Location-Based Inspection of Diversity in Marine Corps Officer Accessions*; Ogden, Brent**

With the policy goal of gaining access to a higher quality and quantity of diverse Marine officer candidates, this thesis examines the spatial distribution of Officer Selection Offices relative to the Qualified Candidate Population (QCP) through the census by the Center for Naval Analyses (CNA). For context, the structure of U.S. Marine Corps Recruiting Command (MCRC) and the officer selection process are examined before exploring the types and methodology of the QCP process, including the delineation between school and county-level QCPs and the metrics that are considered in their formulations. A literature review examines minority thoughts on service in the Marine Corps and looks at an overview of demographics throughout the officer ranks of the service. The impact of diversity on professional organizations is considered.

<https://calhoun.nps.edu/handle/10945/67160>

***Assessing Inclusion in the Fleet for Underrepresented Groups*; Jackson-Searles, Keyaira; Caballero, Anthony**

We examined what inclusion and exclusion behaviors look like among sailors and showed which inclusion and diversity (I&D) competencies, when demonstrated correctly, are most impactful for building an inclusive environment. Our research also shows which command practices and policies contribute to greater acceptance for inclusion. Based on our results, our research shows that underrepresented racial/ethnic groups and females feel less included overall. We then validated that East Coast sailors feel less included compared to West Coast sailors. Based on our findings, we recommend more general military training and utilizing pilot programs to improve emotional intelligence throughout the military. We also recommend distributing the survey throughout the Navy to gain a more complete understanding of diversity and inclusion in the fleet.

<https://calhoun.nps.edu/handle/10945/67141>

Leadership Development

***An Analysis of Personality Traits and Leadership Performance at the United States Naval Academy*; Crawford, Michael**

In this thesis, I investigate whether extroverts are more likely to become leaders, and whether extroverts make better leaders. I use data on U.S. Naval Academy midshipmen who complete the Myer Briggs Test Indicator (MBTI) for personality type awareness. The results show some evidence that extroverts might have a higher probability of selection for key battalion leadership positions, but not at the company leader level or below. The estimates find no difference in leader performance between introverts and extroverts, as measured by peer and senior officer evaluations.

<https://calhoun.nps.edu/handle/10945/67121>

Onboarding

All Aboard! Benchmarking Human Resources Onboarding Practices Part II; Williamson, Tyller

This research builds on the work of Helene Caniac's Naval Postgraduate School thesis "All Aboard! Benchmarking Human Resources Onboarding Practices," by assessing current Department of the Navy (DoN) onboarding practices of Navy civilian executives and providing recommended human resource solutions to support the onboarding of those executives. This research analyzes the onboarding of leaders within organizations through interviews of subject-matter experts and the application of an onboarding model, which was developed using data in Part I of the research. Practices in the onboarding model can assist the Navy in improving leadership development, which has been neglected according to Office of Personnel Management studies.

<https://calhoun.nps.edu/handle/10945/67192>

Performance Management

Parenthood and Its Effects on Performance in Active Duty Medical Personnel, Heyde, John, Mellendick, Kevan

Minimal research to date has examined the impact of new parenthood on either military personnel or medical professionals. This thesis aims to identify the specific impacts of new parenthood on performance of military medical professionals, a group of highly skilled, in-demand, and costly-to-train servicemembers. Using quarterly data from 2013-2019 obtained from the Army Person Data Environment, we used individual fixed effects models to identify how new parenthood impacts physical performance of Army and Navy medical enlisted and officers, using physical fitness test scores and body mass index. These results indicate a need to adopt policies that promote a culture of fitness that coincides with parenthood, including, but not limited to, universal adoption of physical training during work hours, resources directed toward physical training in the pregnancy and postpartum periods, safe physical training while under other life stressors, such as sleep deprivation, and general lifestyle health behaviors. Modifying the timeline of postpartum return to physical fitness testing may also be warranted.

<https://calhoun.nps.edu/handle/10945/67137>

Parenthood and its Effects on the Health and Performance of Dual-Military Marines; Henegar, Amanda

The majority of research has evaluated how childbirth impacts traditional families, but little emphasis has been dedicated to Dual-military (Dual-mil) families. My research examines parenthood effects on Dual-mil Marines and identifies former Dual-mil Marines in the data. We believe Dual-mil Marines respond differently to parenthood. I conduct an event study analysis that uses personnel data from 2010–2019 to estimate the effects of birth on Dual-mil parents. Results show that childbirth impacts mothers' health and performance greater than that of fathers. Mothers in my study exhibited drops in all outcomes and notably never return to their pre-birth fitness levels. Male results illustrated that Dual-mil fathers exhibited greater drops in fitness following birth than other married fathers. Moreover, Dual-mil fathers exhibited a statistically significant drop in job performance immediately following birth, while other married fathers experienced a significant delayed performance drop.

<https://calhoun.nps.edu/handle/10945/67134>

Recruiting

Correlations Between Local Health Conditions and Military Accessions, Berrios, Katrina

To better understand how the variations in disease burdens affects military accessions, I measure local disease burdens using health conditions such as obesity, diabetes, mental health, and vision defects, and military accessions for all services at the county level. In my results, I find that the military mainly draws its accessions from unhealthier parts of the United States even after controlling for differences in income and education across counties. Therefore, my findings indicate that the military still draws many of its accessions from parts of the county with worse underlying disease burdens. These findings have important implications for future medical policy design and entry into the U.S. military.

<https://calhoun.nps.edu/handle/10945/67107>

Effects of Home School Education on Marine Corps Enlisted Quality, Oldencamp, Jason

Survey and polling data suggest that the U.S. homeschooled student population is increasing. Annual Marine Corps enlistments of homeschool graduates are also rising after a provision contained in the 2014 National Defense Authorization Act granted homeschoolers the same enlistment status as high school graduates. The purpose of this study is to determine how these trends impact Marine Corps recruiting efforts and whether homeschooled students differ significantly from the Marine Corps' primary recruiting market, traditional high school graduates.

<https://calhoun.nps.edu/handle/10945/67161>

You Recruit Who You Are: The Quality Relationship Between Marine Recruiter and Enlistee; Eliason, Brandon

In recruiting, the phrase "you recruit who you are" describes a presumed relationship—recruiters attract and enlist individuals who are similar to themselves or within their in-group. This research

evaluates the correlation of high-quality recruiters on high-quality enlistees. For the 264,681 recruiter-enlistee pairs from 2011 to 2019, quality is defined and determined for both recruiters and enlistees with five metrics using DOD enlistment standards and Marine Corps promotion and retention standards. Because force design necessitates higher-quality accessions, this thesis therefore recommends that the Marine Corps consider sending more high-quality Marines to recruiting duty to potentially improve the quality of the warfighting organization. Conversely, if the Marine Corps does not prioritize and send high-quality Marines to recruiting duty, then the Marine Corps may pay the price with lower quality enlistees.

<https://calhoun.nps.edu/handle/10945/67126>

Retention

Marine Corps Officer Accession: An analysis of effects on career level promotion; Conlan, David R.

The purpose of this research was to determine the significance of Marine Corps officer accession sources in relation to achieving career-level promotion benchmarks. The study first determined what characteristics the Marine Corps values in selecting officers for promotion to major and lieutenant colonel. Then, the study compared the focus variables of accession source to determine if any specific program is more likely to produce career-level officers. The results suggest that master's degrees, personal awards, physical fitness, marksmanship, and fitness report evaluations, particularly Reviewing Officer assessments, are statistically significant in determining promotion to major and lieutenant colonel.

<https://calhoun.nps.edu/handle/10945/67118>

Marine Corps Childcare Development Center Wait List Trends and Impact on Families;

Schumacher, Julie

While the main goal of the CDC is to provide high quality and easily accessible childcare to military families, many locations have developed excessive waitlists. This thesis compares the CDC capacity data to the population, by age group, from January 2010 to March 2020 at Marine Corps installations across the fleet. A detailed comparison across the bases is made to identify trends that potentially have an impact on childcare waitlists. This thesis also examines the waitlist data for each installation from March 2018 to March 2020 to analyze seasonal enrollment fluctuations. Data from thirteen Marine Corps Bases, including those in Japan and Hawaii, is analyzed.

<https://calhoun.nps.edu/handle/10945/67178>

Improving USMC Retention Quality Through Reenlistment Pre-Approval; Norville, Nicholas

To target the highest quality Marines, this study looks at the quality of Marines selected for pre-approved retention in relation to the overall First-term Alignment Plan (FTAP) retention goal and examines the effectiveness of pre-approval selection at identifying improved subsequent term performance for those Marines who have already been retained. This study also analyzes the potential impact of pre-approved retention on the availability of boat-spaces and the number of reenlistment requests submitted. The results suggest that by targeting the highest quality (Tier-I) Marines, improved quality retention can be obtained without exceeding FTAP retention goals.

Additionally, the results indicate the proposed pre-approval model effectively predicts quality performance in a Marine's subsequent term as indicated by tier calculation performance variables.
<https://calhoun.nps.edu/handle/10945/67157>

A Plan for Action: How the DOD Begins, Systematically, to Address the Housing Failures of Today to Preserve the National Defense of Tomorrow; Bell, Steven

Military family housing programs are in crisis, the product of a policy-strategy mismatch resulting from competing interests among the United States Congress, Department of Defense, private real-estate developers, and the military members and families who rely on military housing. This thesis investigates the mismatch and its impacts on military member and family health and readiness. Responses to this study's survey and research sample suggest that few differences exist between respondents of military family housing and residents of local civilian community housing, with the most significant supported finding being that military housing respondents' air-filtration maintenance occurs less often than that of local community housing. The overall findings suggest that the survey instrument, with minor improvements, could be used to acquire accurate and actionable data related to occupant health, well-being, and readiness.

<https://calhoun.nps.edu/handle/10945/67106>

Bootcamp Accession Trimester Effects on Performance and Retention; Cruz, John

In this thesis, I analyze the Marine Corps' accession plan and the relationship between a Marine's accession trimester and time awaiting training, as well as their likelihood to re-enlist after their first term and the probability of attrition prior to completing their first term. Additionally, this study determines if enlistees from the June, July, August, and September trimester outperform enlistees from the other trimesters. I use linear regression models and graphical trend analysis to estimate the relationships. I find that June, July, August, and September enlistees have the highest mean days awaiting training. Furthermore, the phasing approach increases the time awaiting training days for the following trimester. The increase in time awaiting training appears to be negatively associated with the probability of re-enlistment. Graphical analysis suggests the June, July, August, and September enlistees did not perform better than their counterparts; however, the differences in performance measure are minor.

<https://calhoun.nps.edu/handle/10945/67123>

Overcoming Barriers: The Impact of Job Satisfaction on the Retention of Minority Officers; Smith, Christopher; Akpunku, Jude

In the context of this study, job satisfaction includes the following components: sense of affiliation, sense of inclusion, need to belong, and perceived organizational support. Using these components, this thesis performs a comparative analysis of survey data from junior officers (O1 to O3) and thematic analysis of twelve interviews from senior officers (O-4 and above) to identify commonly perceived barriers to retaining a diverse workforce. Our analysis identifies sense of affiliation and belonging as components of job satisfaction that remain unmet for minority officers in our sample. Based on these findings, our recommendation is to try to address these job satisfaction components by introducing soft leadership skills at milestone schools, leveraging affinity groups to

improve mentorship opportunities and implementing strategies to hold the organization accountable.

<https://calhoun.nps.edu/handle/10945/67182>

Talent Management

Marine Corps MOS Assignments; Career Impacts of Match Quality, Bailey, John M.

One concept within talent management, match quality, remains largely overlooked and unexplored. This research explores whether the same economic and social benefits of match quality suggested in the literature also apply in the Marine Corps. As such, this thesis uses regression analysis to determine the statistical relationship between MOS preference received on career outcomes among Marine Corps officers. It also determines factors not currently considered within the Marine Corps' MOS assignment process that may be used to improve Marine Corps officer's occupational specialty match quality. The results of this study indicate a modest, but statistically significant, relationship between MOS preference received and performance.

<https://calhoun.nps.edu/handle/10945/67099>

Effects of Preferred Duty Station Assignment on the Performance and Retention of USMC Personnel, White, Ansley

I use FITREP duty station preference and performance data to conduct fixed effects difference-in-differences and survival analysis to examine how assignment to a desired duty station affects the future performance and retention of Marines. Results indicate that enlisted Marines who are assigned to desired duty stations early in their careers on average perform .232 points higher on their FITREPs relative to Marines who are not. Top-tier performers who receive desired orders perform .336 better than their counterparts, and Marines who request and are assigned to the operating forces outperformed peers by 0.537. Assignment to desired duty stations is also highly correlated with the retention of top-performing officers.

<https://calhoun.nps.edu/handle/10945/67191>

Training

How the US Navy Can Become a Better Learning Organization; Kenning, Robert

This thesis addresses this question by taking a precise look at what a learning organization is, what its essential parts are, and why they are important. This research is qualitative in nature and includes analyses of published literature, public records, congressional testimonies, committee hearings, and documented reform attempts. The work attempts to answer why the Navy has struggled to become a learning organization in the past, where it has found some small successes, and what the reasons are for failure.

<https://calhoun.nps.edu/handle/10945/67144>

Student Success Factors at Defense Language Institute Foreign Language Center; Bermudez-Mendez, Jonathan

At the end of a student's course of instruction, DLI administers the Defense Language Proficiency Test (DLPT). The current minimum score to pass the DLPT for all basic program students is L2/R2/S1+, and not all students meet this standard. The director of the National Security Agency (NSA) identified that the L2/R2 standard leaves too large a training gap to meet NSA's operational requirements. DLI has been directed to increase the graduation standard to L2+/R2+, which most students do not currently meet. We developed four stepwise logistic regression models that could predict a student's probability of success at different stages in the student lifecycle. As a student progresses through the program, performance in advanced language classes was the most significant factor in predicting success. Factors such as DLAB score, prior language experience, and language category proved significant throughout the student lifecycle.

<https://calhoun.nps.edu/handle/10945/64866>